

Date: Thursday, 06/11/2008 3:45:45 PM
 User: Julie Dawson

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : BLADE
Job Number : 43255	
Estimate Number : 10327	
P.O. Number :	Part Number : D2741
This Issue : 06/11/2008 S.O. No. :	Drawing Number : D2741 REV C
Prsht Rev. : NC	Project Number : N/A
First Issue : / / Type : MACHINED PARTS	Drawing Revision : C
Previous Run : 42222	Material :
Written By :	Due Date : 14/11/2008 Qty: 20 Um: Each
Checked & Approved By : <u>JLD 08.11.06</u>	
Comment : Est Rev: D 00.11.15 Removed P/O turning - in house processEC	
Est Rev: E 06-03-20 As Per Rev C	
JLM	
Est Rev: F 06.04.20 Added grinding after heat treating EC	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	M4130NB0500X03000	4130 Bar 0.500 x 3.00
-----	-------------------	-----------------------



Comment: Qty.: 1.2118 f(s)/Unit Total: 24.2361 f(s)
 4130 BAR 0.5 x 3.0"
 Material: 4130 steel bar 0.50" x 3.00" Batch: 109614

(22)

SS 08/11/07

2.0	BAND SAW	BAND SAW
-----	----------	----------



Comment: BAND SAW
 Cut blanks 13.850" long +0.063" -0.000"

(22)

SS 08/11/07

3.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
-----	-------	--------------------------------



Comment: HAAS CNC VERTICAL MACHINING #1
 1-Machine per folio FA108

(22)

H.A 08/11/07

SS 08/11/07

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 06/11/2008 3:45:45 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BLADE

Job Number: 43255

Part Number: D2741

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	--



(22)

Comment: INSPECT PARTS AS THEY COME OFF MACHINE

SA 08/11/08

5.0	QC8	SECOND CHECK
-----	-----	--------------



Comment: SECOND CHECK

SA 08/11/10

(22)

6.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1
-----	-------------	-------------------------------



Comment: SMALL & MEDIUM FAB RESOURCE 1
1-Deburr
2-Bend per Dwg D2741

SA 08/11/10

(22)

7.0	QC5	INSPECT WORK TO CURRENT STEP
-----	-----	------------------------------



counters

Comment: INSPECT WORK TO CURRENT STEP

SA 08/11/10

(22)

8.0	OUTSIDE SERV.30	OUTSIDE SERVICES-MACH
-----	-----------------	-----------------------



Comment: Sub-Contracting PURCHASING
Issue P/O: 7638
Harden material as per Dwg D2741
Min. Ultimate Tensile Strength = 152 ksi (34-40 HRC)
Min. Yield Tensile Strength = 141 ksi
Test report or Certification required

SA 08/11/20

(22)

9.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------



Comment: PACKAGING RESOURCE #1
Receive and Inspect for transit damage
Ensure Test report or Certification attached

SA 08/12/09

(22)

10.0	QC5	INSPECT WORK TO CURRENT STEP
------	-----	------------------------------



counters

Comment: INSPECT WORK TO CURRENT STEP

SA 08/12/10

(22)

11.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1
------	-------------	-------------------------------



Comment: SMALL & MEDIUM FAB RESOURCE 1
1-Pass in deburring machine
2-Grind off edges

SA 08/12/10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 06/11/2008 3:45:45 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BLADE

Job Number: 43255

Part Number: D2741

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

POWDER COATING

POWDER COATING



M1109152
** ensure parts are cleaned **



(22X)

Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.2) as per QSI 005 4.3

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

8:20
OF
400
8:50

MF 08/12/11

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



MF



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

08-12-11

(X22)

14.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: *SI*

MF 08-12-11

15.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

08/12/15

Job Completion



MF 08-12-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

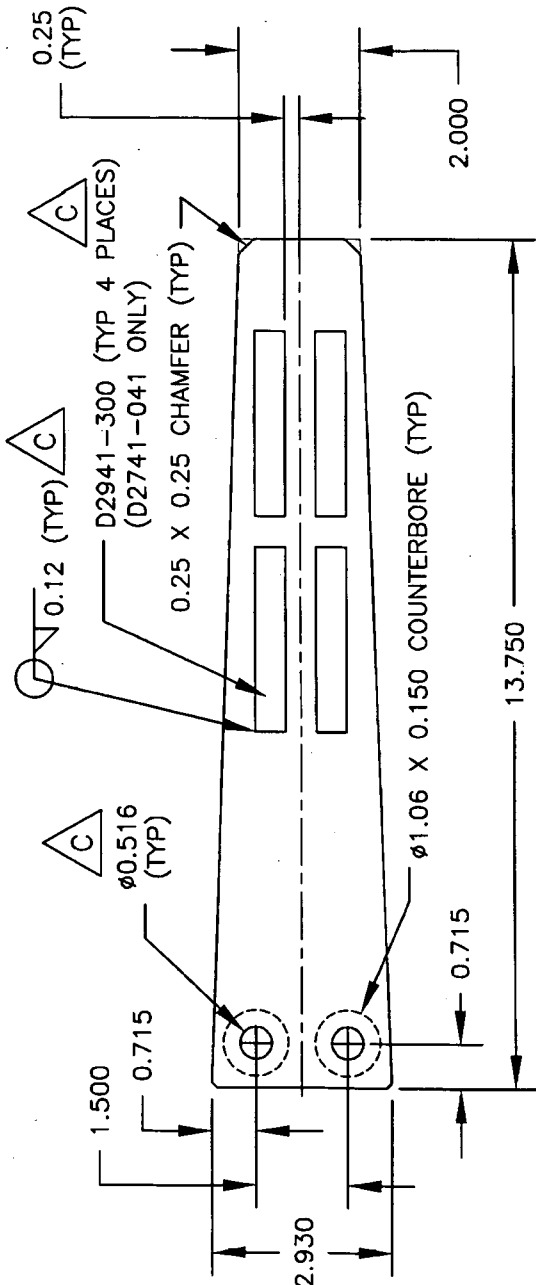
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

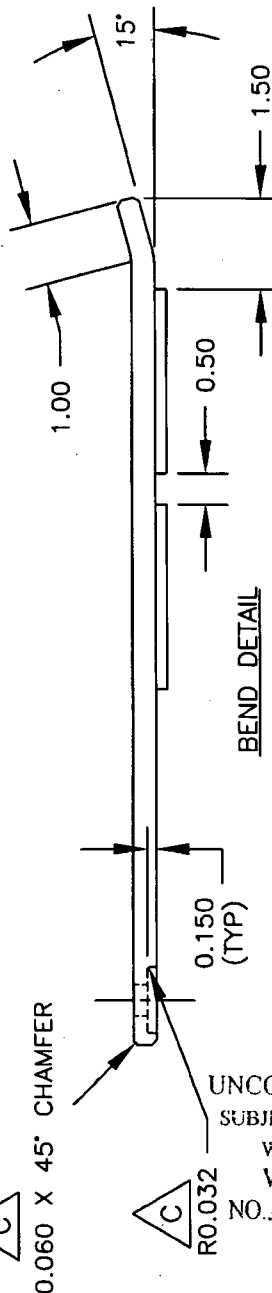
NOTE: Date & initial all entries

DART**RELEASED**
06 02 07

DESIGN PH	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D2741	REV. C SHEET 1 OF 1
DATE 06.01.12		TITLE BLADE	SCALE 1:3
A	98.04.16	NEW ISSUE	
B	98.09.01	CHANGE C'SINK TO C'BORE	
C	06.01.12	LARGER HOLE, ADD RADIUS AND CHAMFER ADD -041/-043 OPTIONS	



FLAT PATTERN



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 43255

D2741 BLADE

- 1) MATERIAL: AISI 4130 STEEL 0.375 THICK
MIN. ULTIMATE TENSILE STRENGTH = 152 ksi (34-40 HRC)
MIN. YIELD TENSILE STRENGTH = 141 ksi
POWDER COAT WHITE (REF. 4.3.5.2) PER DART QSI 005 4.3
- 2) FINISH: ALL DIMENSIONS ARE IN INCHES
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) BREAK ALL SHARP EDGES 0.030 TO 0.060
- 5) TO MAKE D2741-041, WELD D2941-300 (4) AS SHOWN ABOVE.
- 6) REMOVE POWDER COAT FROM SURFACE OF D2941-300
- 7) TO MAKE D2741-043, WELD 7560 HARDCOAT ROD INSTEAD OF D2941-300

Copyright © 1998 by DART AEROSPACE USA, INC.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



Metcor Inc.

Metcor Inc.
 Page 1 of 1
 560, boul. Arthur-Sauvé
 St-Eustache (Québec) J7R 5A8
 Tél.: (450) 473-1884
 Fax Administration: (450) 491-5498
 Fax Production : (450) 491-6454

Rapport d'inspection

Order	Load
143480	1

Customer **215**
 DART AEROSPACE
 1270 ABERDEEN
 HAWKESBURY

ON K6A 1K7

Shipped To:
 DART AEROSPACE
 1270 ABERDEEN
 HAWKESBURY

ON K6A 1K7

Customer PO / PO du Client	Customer Shipper No.	Material Type / Material	Mat'l Heat Code	Lot Number
7638		4130		
<u>PROCESSING SPECIFICATIONS</u>				
SEL HARDEN HARDEN AND TEMPER SAE AMS 2759/1 REV.D				
Requirement HARDNESS	Specified 30 - 40 HRC	Tests Performed 22	Test Results 38 - 40 HRC	OK of 08.12.10
Quantity	Weight	Part Number / Part Description		
22	76	D2741 B43255 1 BOITE DE BOIS		

COMMENTS

INSPECTOR:

And 75



DATE: 2008-12-03

C.O.D.

Certification

Order	Load
143480	1

Customer 215
 DART AEROSPACE
 1270 ABERDEEN
 HAWKESBURY

ON K6A 1K7

Shipped To:
 DART AEROSPACE
 1270 ABERDEEN

1

HAWKESBURY

ON K6A 1K7

Customer PO / PO du Client	Customer Shipper No.	Material Type / Material	Mat'l Heat Code	Lot Number
7638		4130		

PROCESSING SPECIFICATIONS

SEL HARDEN
 HARDEN AND TEMPER
 SAE AMS 2759/1 REV.D

Requirement	Specified	Tests Performed	Test Results
HARDNESS	30 - 40 HRC	22	38 - 40 HRC

JP 08.12.10

Quantity	Weight	Part Number / Part Description
22	76	D2741 B43255 1 BOITE DE BOIS

S 08.12.10

Operation	Specified Temp	Specified Soak Time	Atmosphere	Carbon Potential	Q-Media Q-Temp	Furnace# Load #	Start Date	Time In	Time Out	Date Complete
1.00 CONT. INIT.	LAVAGE		si nécessaire							
2.00 PREPARING	COMPTAGE									
3.00 PREHEAT 1	1000	1:00 1:30	air			134	11-28-08	10:40	12:45	11-28-08
4.00 SEL HARDE	1575	0:40	sel		Brine	107	11-28-08	12:45	13:35	11-28-08
5.00 WASH	150	0:30	soap			150	11-28-08	14:00	15:00	11-28-08
6.00 SNAP TEMP	400	2:00	air			609	11-28-08	15:00	17:05	11-28-08
7.00 TEMPER	875 +/-10°F	2 hrs	air			639	11-29-08	13:50	16:05	11-29-08
8.00 HARDN INS										

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

Certification

Order	Load
143480	1

Customer 215
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

Shipped To:
DART AEROSPACE
1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

Operation	Specified Temp	Specified Soak Time	Atmosphere	Carbon Potential	Q-Media Q-Temp	Furnace# Load #	Start Date	Time In	Time Out	Date Complete
9.00 SANDBLAS			Sablage							
10.00 HUILAGE			huile							
11.00 FINAL INSP										12-03-08

COMMENTS

APPROVED BY:



DATE: 2008-12-03

We certify that all the information on this report is exact and in accordance with the order requirements. / Nous certifions que toute l'information comprise sur ce rapport est exacte et conforme aux requis du client.


Metcor inc.

560 boul. Arthur Sauvé, Saint-Eustache, Québec, J7R 5A8
 Tél.: (450) 473-1884 Fax.: (450) 491-5498
 E-Mail: sales@metcor.biz / Courriel: ventes@metcor.biz

Dart Aerospace
 1270 Aberdeen St
 Hawkesbury, ON
 K6A 1K7

QUOTATION
C-16774

Date: 2008-11-04

SUJET AUX CONDITIONS DÉCRITES CI-DESSOUS
SUBJECT TO CONDITIONS BELOW

Soumission valide pour 6 mois seulement
Quotation good for 6 months

E-Mail Courriel:
 Work Order:

hell@dartaero.com

Réquisition/Inquiry:

Attention: Linda LaCelle

Tel 613-632-5200

Qté / Qty	Mat./Spec.	Dessin/dwg	Description		
40	4130	D2741 weight aprox 3.6 lbs/ea x 40 = 144 lbs	Blade 13.75" lg x 2.930" x 0.375" thick Heat treat to 152KSI min per AMS-2759/1 Minimum charge : \$ 195.00 Note: Parts are finish-machined	\$9.41	/ea
<p>*** IMPORTANT ***</p> <p>Si ce numéro de soumission n'apparaît pas sur votre bon de commande, vous serez facturé selon la liste de prix en vigueur. If this number does not appear on your purchase order you will be charged, based on the current price list</p>					
<p>C 16774</p>					

Termes:
 Terms:

C.O.D.

F.A.B. notre usine
 F.O.B. our plant

TPS et TVQ extra
 GST and PST extra

No. fax

613-632-5246

Remarques/Remarks:

METCOR INC. GARANTIE ET LIMITES DE RESPONSABILITE
 Notre compagnie garantit que le travail qui lui est confié est exécuté sous la surveillance de techniciens spécialisés. Cependant, elle ne peut assumer, et elle n'assume pas les risques inhérents à la nature même du travail accompli, soit les déformations ou les ruptures qui peuvent survenir pendant et après le traitement thermique.
 Notre responsabilité, quant à la négligence de nous conformer aux instructions données et aux spécifications fournies par le client, est conditionnelle à notre acceptation écrite de telles instructions spécifiques, cela sous la signature d'un officier autorisé de notre compagnie. De plus, en pareil cas, et sauf erreur écrite contraire, notre responsabilité se limitera au montant de nos frais d'exécution du travail entrepris.
 Toute réclamation devra se faire par écrit à l'adresse de notre compagnie. De plus, les réclamations pour erreur de quantité ou de pesantier devront se faire dans les cinq (5) jours ouvrables qui suivront la réception de la marchandise par le client ou son représentant, alors que les réclamations concernant les spécifications du travail exécuté devront se faire dans les dix (10) jours ouvrables qui suivront la date de réception par le client.

METCOR INC. WARRANTY AND STANDARD LIABILITY POLICY
 This company warrants its work to be done under the surveillance of qualified technicians. However, this company cannot assume and does not assume the inherent risks due to the nature of the work performed, such as deformation and cracking during or after the thermal treatment.
 Our responsibility regarding our carelessness to comply with our customers' specifications, is provisory to a written acceptance of such specifications, under the signature of an authorized officer of our company. In such cases, our liability to our customers shall not exceed our charges for the work done on any material except by written agreement to the contrary.
 All claims have to be sent in writing to our plant. Claims for error on quantity or weight must be made within five (5) working days following the date of receipt of goods by the customer or representative. All claims on material not meeting specifications must be made within ten (10) working days following the date of receipt of goods by the customer.
 No agent or representative is authorized to alter the rules and conditions above mentioned. All other agreements and amendments shall be made in writing and be valid only if signed by a duly authorized officer of this company.

METCOR INC.

Andy Russell

Estimateur/Estimator